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ABSTRACT

Data presented in this report are the results of the special assessment of writing mechanics conducted during the 1978-79 school year by the Education Commission of the States (ECS) for the Department of Defense Dependents Schools (DoDDS). The purposes of the study were (1) to examine writing abilities of 9-, 13-, and 17-year-old students enrolled in the DoDDS system, and (2) to compare their writing abilities with those of students enrolled in schools within the continental United States. Once a representative sample of students at each of the three ages was selected, assessment materials were distributed. These materials included an instruction manual for DoDDS personnel, administering the assessment, the assessment booklets, and a paced audiotape presenting the materials to students. Each assessment booklet contained an essay writing task. Following assessment, the materials went on to the regional coordinator, and then to the scoring site. This report is organized by age group: a profile of the "average" essay is presented and discussed: a brief examination of the range of essays is provided: and a comparison of "average" papers by DoDDS students with those of their national counterparts is discussed. (Author/GK)

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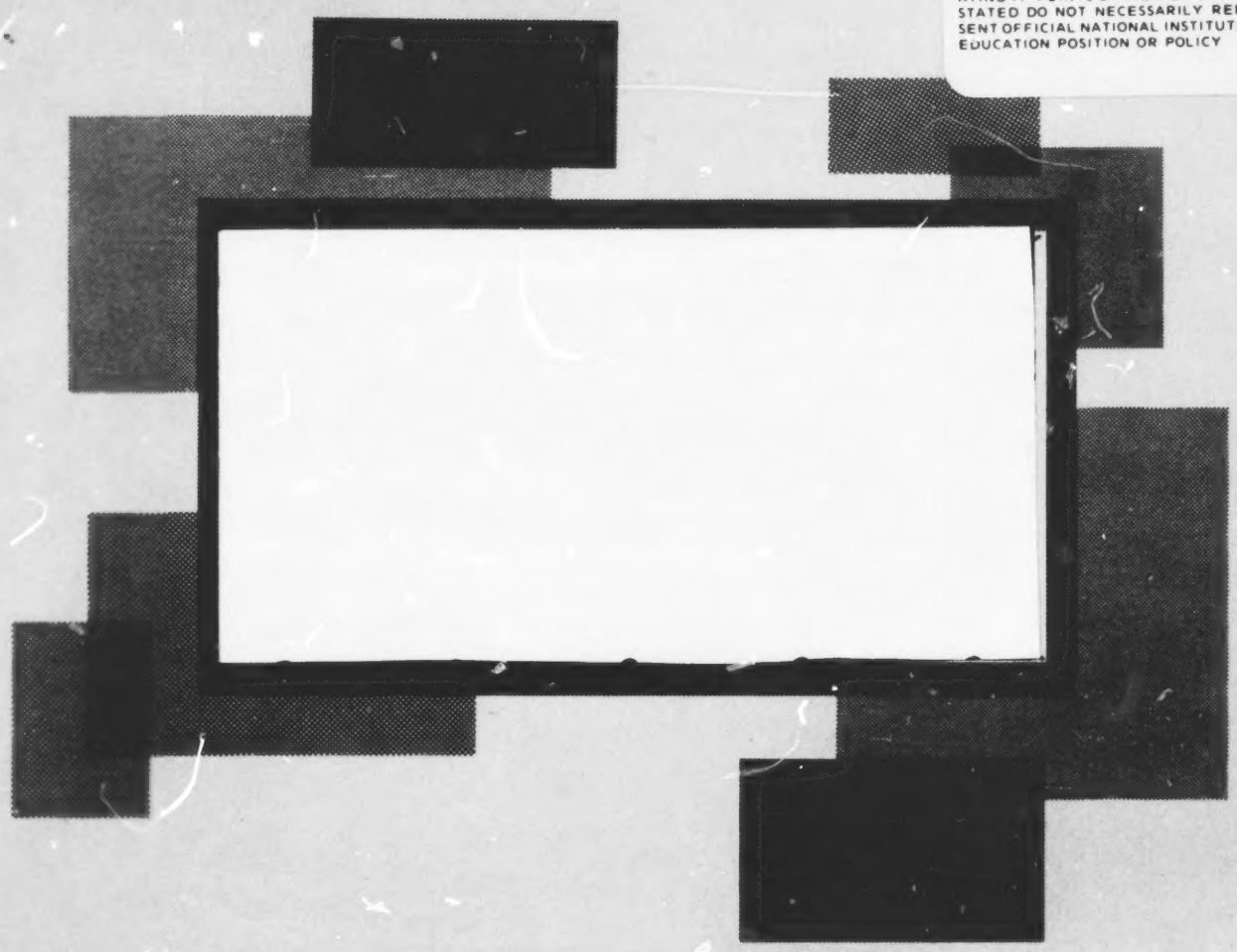

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WRITING MECHANICS, 1979

A Description of the Writing Abilities
Assessment of 9-, 13-, and 17-Year-Olds
Enrolled in the Department of Defense
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conducted by the

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The data presented in this report are the results of the special assessment of writing mechanics conducted during the 1978-79 school year by the Education Commission of the States (ECS) for the Department of Defense Dependents Schools (DoDDS). The purposes of the study were 1) to examine, from a mechanics viewpoint, the writing abilities of 9-, 13-, and 17-year-old students enrolled in the DoDDS system and 2) to compare their writing abilities to those of students enrolled in schools within the continental United States, as collected and reported by the National Assessment of Educational Progress.

In assessing the DoDDS students, the National Assessment procedures were replicated as closely as possible in order to ensure comparability. A representative sample of seven hundred fifty (750) students at each of the three ages was selected from student listing forms provided by the DoDDS schools. Once the sample for an age was selected, assessment materials were mailed to each school whose enrolled students included those selected to participate in the assessment. These materials included: a listing of students selected, an instruction manual to be used by the DoDDS personnel responsible for administering the assessment to students, the assessment booklets (one for each respondent), and a paced audio tape which presented the materials to respondents. Thirteen-year-olds were assessed during January; nine-year-olds were assessed during February; and seventeen-year-olds were assessed during March.

The assessment booklet for each age contained an essay writing task that was the same as National Assessment had used in its 1969 and 1974 assessments of writing. The exercise for each age had another advantage in that National Assessment was using the same exercise as a part of the writing assessment it was conducting during the 1978-79 school year. Thus, it would be possible to make comparisons between DoDDS students and their national counterparts using data collected at approximately the same time. The essay writing tasks are presented in Appendix A.

During data collection, there were two departures from the procedures used by National Assessment. First, school personnel were used to administer the assessment materials to the DoDDS students. National Assessment does not use school personnel to administer the assessment; rather, exercise administrators are hired and trained by National Assessment to administer the materials. However, this did not appear to be an efficient or cost-effective approach for the DoDDS assessment given the location of the students throughout the world. Secondly, 13-year-olds were assessed during January. National Assessment conducts its assessment of 13-year-olds from October through December, but it was not possible to work out the logistics of assessing DoDDS 13-year-olds prior to January. However, it was decided that if the performance of DoDDS 13-year-olds differed radically from that of their national counterparts and this difference did not occur at the other two ages, then administering the materials at a another time of the year would have to be considered as an explanation for the difference. Fortunately, this does not appear to be the case.

After the assessment was completed for the age group in a particular school, the materials were forwarded to the regional coordinator, who in turn forwarded them to the scoring site. Upon arrival at the scoring site, the assessment materials underwent receipt control procedures based on those used by National Assessment to assure that all materials were accounted for, to remove essays written by students who were non-age eligible, and to resolve essays where there had been problems with the administration of the assessment. As a result of these procedures, the sample of DoDDS students ended up being slightly less than 750 at each age. The essays were then prepared for scoring.

To assure comparability of scoring procedures, the readers were trained using a mixture of DoDDS and National Assessment papers. It should be noted that because of the lengthy delay in receiving the assessment materials administered to DoDDS 17-year-olds in the European region, very few papers written by DoDDS 17-year-olds

were included in the training materials. Once the readers were thoroughly versed in the scoring procedures, they began to score the actual essays. The scoring outline utilized by the readers is presented in Appendix B. Because of the level of detail required to score the essays, each essay was independently rated by two readers with a third acting as a resolver in cases where there were discrepancies. The essays and their scoring codes were then key-entered on magnetic tape and the analysis of the essays was conducted via a computer.

For analysis purposes, the basis of analysis was the essay written by an individual student. The computer first analyzed each essay, "counting" the number of words in the essay, the number of sentences, the number of letters, numbers of paragraphs, etc., and then "computing" the percent of simple sentences, average number of words per sentence, percent of coherent paragraphs, etc., for each essay. After it had completed this for each of the seven hundred thirty-eight (738) essays written by DoDDS 9-year-olds, it created an "average" essay based on the counts and percentages of the total sample. It also created an "average" essay for the three hundred seventy-five (375) males and three hundred sixty-three (363) females assessed at age nine. The same process was followed for the seven hundred five DoDDS students (three hundred forty-three males and three hundred sixty-two females) assessed at age 13 and the seven hundred thirty-nine DoDDS 17-year-olds assessed (three hundred fifty-six males and three hundred eighty-three females).

This study generated far more data than the average reader would ever wish to see. Since all the data have been provided to the DoDDS evaluation section, this report has been limited to only the most salient figures. Nonetheless, there are many numbers to look at and ponder over, and it is important to understand exactly what they represent.

Some readers may be confused by the footnote accompanying most tables explaining that asterisked numbers are "statistically significant." From a statistical viewpoint, this means that one is 95% confident that the differences are real and not a chance artifact of the study design or the sample. Many results may be important even though they are not statistically significant; conversely, statistically significant results need not be educationally important. It is up to each reader to make these judgments.

The remainder of this report is organized by age group. For each age, a profile of the "average" essay is presented and discussed. Then a brief examination of the range of essays is provided to convey to the reader a sense of the diversity of performance the students displayed. Finally, a comparison of the "average" paper written by DoDDS students and the "average" paper written by their national counterparts is presented and discussed.

CHAPTER 2:

The Performance of 9-Year-Olds

A. Profile of the Average Essay Written by a DoDDS 9-Year-Old Student in 1979.

What did the average paper written by 9-year-olds enrolled in the Department of Defense Dependents Schools (DoDDS) look like? Table 1 provides a descriptive picture of the average essay for DoDDS students and a profile of the essays written by males and females. The average essay consisted of 76 words; males wrote significantly shorter essays (68 words) while females wrote significantly longer essays (approximately 85 words). The average essay contained between six and seven sentences, with the average essay written by males containing slightly fewer than six sentences and the average essay written by females containing a little more than seven sentences. The sentences were approximately 16 words in length, with the average word containing approximately four letters. For the average essay, the sentences tended to be organized into approximately one paragraph.

Table 1. Average Essay Written by DoDDS 9-Year-Olds, Counts

	All DoDDS Students	Males	Females
Average number of words/essay	76.1	68.0 (-8.1*)	84.5 (8.4*)
Average number of sentences/essay	6.5	5.6 (-0.9*)	7.3 (0.8*)
Average number of paragraphs/essay	1.34	1.28 (-0.06)	1.40 (0.06)
Average number of punctuation marks	8.0	6.7 (-1.3*)	9.4 (1.4*)
Average number of letters/word	3.8	3.8	3.8
Average number of words/sentence	15.9	16.3 (0.4)	15.6 (-0.4)
Average number of words/paragraph	68.9	62.5 (-6.4*)	75.6 (6.7)
Average number of sentences/paragraph	5.7	5.1 (0.6)	6.4 (0.7)

*Differences (in parentheses) that are statistically significant are indicated by asterisks.

Table 2. Average Essay Written by DoDDS 9-Year-Olds, Sentences

	Average Number of Sentences/Essay	Average Percent of Sentences/Essay
Simple sentences		
All DoDDS students	3.2	43%
Males	2.9	44
Females	3.5	43
Compound sentences		
All DoDDS students	0.3	5
Males	0.3	5
Females	0.4	5
Complex sentences		
All DoDDS students	1.8	28
Males	1.5	27
Females	2.2	29
Run-ons		
All DoDDs students	0.7	17
Males	0.6	18
Females	0.8	17
Fragments (incorrect)		
All DoDDS students	0.4	6
Males	0.4	7
Females	0.4	6
Sentences with phrases		
All DoDDS students	3.7	56
Males	3.3	57
Females	4.2	56
Simple sentences with phrases		
All DoDDS students	2.1	30
Males	2.0	32
Females	2.3	29
Compound sentences with phrases		
All DoDDS students	0.2	4
Males	0.2	4
Females	0.3	4
Complex sentences with phrases		
All DoDDS students	1.4	22
Males	1.1	21
Females	1.6	22

Table 2 provides more detailed information about the types of sentences used in the average essay. The first five categories in the table add up to the total number of sentences in the essay. The remaining four categories are not additive. Thus, of the six to seven sentences in the average paper, three are simple sentences, two are complex sentences and the remainder are either compound sentences, run-ons or incorrect fragments. It should be noted that these last two are not considered acceptable sentence forms. If these figures are translated into percents, then it is likely that 43% of the sentences in the average essay will be simple sentences, 28% will be complex sentences, 17% will be run-ons, 5% will be compound sentences and 6% will be incorrectly used sentence fragments.

At first glance, some of these percentages may be surprising. For example, the low percentage of compound sentences may run contrary to what might be expected. The image of great numbers of "ands" and "ors" does not seem to be an accurate one here. One explanation might be the task. Compounding is most common in narrations; consequently, those writers who chose to approach the picture using a more explanatory mode would not find it necessary to incorporate many transitional devices.

But this may not be the only reason. Many of the 9-year-olds did take the opportunity to tell stories and, given the low incidence of compound sentences, they must have been using other methods to link their ideas. The high percentage of complex sentences and sentences with phrases may be the key to what those links were.

Initially, the high percentage of simple sentences may be alarming and may produce some fears as to the level of writing and to the possibility of an absence of links. But, it must be remembered that this category includes both simple sentences and simple sentences with phrases. Of the 43% of the sentences classified as simple, 30% were simple sentences with phrases. Thus, only 13% of these sentences were simple sentences that contained only a subject and a verb

and possibly an object or subject complement, indicating there was a certain amount of elaboration and modification.

Even at the compound sentence level, an overwhelming percentage of the sentences had phrases: 4% out of the average of 5%. In addition, 2?% of the sentences -- over one-fourth -- were classified as being complex; of those, 22% contained phrases, which indicates attempts to use a variety of transitional devices. Overall, 56% of the sentences in the average essay were sentences that had phrases. This seemed to hold true regardless of the sex of the writer. Even though males wrote slightly shorter essays than females, the types of sentence constructions used appear to be essentially the same.

Four out of every five paragraphs were coherent (i.e., consistent in their use of topic tense and time). One paragraph out of every 12 also was fully developed (i.e., had one central area of concern and each sentence representing an orderly addition or explanation of that concern). The data concerning paragraphs are presented in Table 3. While approximately the same percentage of coherent paragraphs were written by males and females (73% and 72%, respectively), a significantly higher percentage of the paragraphs written by females were rated as both coherent and developed.

Table 3. Paragraphs, Age 9

	Average Number	Average Percent
Incoherent paragraphs		
All DoDDS students	0.41	19%
Males	0.42	21
Females	0.40	17
Coherent paragraphs		
All DoDDS students	0.84	73
Males	0.81	73
Females	0.88	72
Coherent and developed paragraphs		
All DoDDS students	0.09	8
Male	0.06	6
Female	0.12	11

What types of errors were present in the essays written by DoDDS 9-year-olds? Table 2 indicates that 6% of the sentences found in the average essay were actually incorrect sentence fragments. This includes any word group, other than an independent clause, written and punctuated like a sentence. Table 2 also indicates that 17% of the sentences were run-ons. Run-ons include three types of errors: fused sentences where there are two or more independent clauses with no punctuation or conjunction separating them; on-and-on sentences where there are four or more independent clauses strung together with conjunctions; and comma splices where two or more independent clauses are joined by a comma instead of a semicolon or a coordinating conjunction. Table 4 presents data for the three types of errors included in the run-ons category. The major problem appears to be with fused sentences, which accounted for 12% of the run-ons. Again, it is interesting that males and females followed essentially the same pattern with regard to run-ons.

Table 4 Types of Run-ons, Age 9

	Average Number of Sentences/Essay	Average Percent of Sentences/Essay
Fused sentences		
All DoDDS students	0.5	12%
Males	0.4	13
Females	0.5	12
Comma splices		
All DoDDS students	0.1	2
Males	0.1	2
Females	0.1	2
On-and-on sentences		
All DoDDS students	0.1	3
Males	0.1	3
Females	0.1	3

Faulty sentence constructions is another area to examine when considering errors in the essays. This error includes awkward sentences and sentences with agreement errors. A sentence was considered to be awkward if it contained at least one of the following: faulty subordination (putting the main idea into a dependent clause and a secondary idea into a main clause); unclear pronoun antecedent; dangling or misplaced modifier; omitted or extra words; faulty coordination (two or more independent clauses written as one sentence but not logically related); mixed or illogical construction such as faulty parallelism; and split construction. If a sentence contained more than one of these problems, the sentence was rated as awkward only once. A sentence was rated as having an agreement error if there was a problem with subject/verb, pronoun/antecedent or noun/modifier agreement, subject/object pronoun usage, or a shift in verb tense. Again, a sentence was scored as having an agreement error if at least one of these errors was found in a sentence; multiple errors within a sentence were not scored. The data for faulty sentence constructions in the DoDDS study are presented in Table 5.

Table 5. Faulty Sentence Constructions, Age 9

	Average Number of Sentences/Essay	Average Percent of Sentences/Essay
Awkward sentences		
All DoDDS students	1.0	21%
Males	0.9	24
Females	1.0	19
Sentences with agreement errors		
All DoDDS students	0.5	10
Males	0.5	12
Females	0.4	8

One out of every five sentences found in the average essay was considered to be awkward, and one out of every 10 sentences contained an agreement error. The essays written by males contained significantly more awkward sentences and agreement errors. This is especially interesting in light of the fact that males and females followed essentially the same patterns with regard to incorrect sentence fragments and run-ons. However, the males did average one more word to their sentences than the females, and perhaps this was a contributing factor in their increased awkwardness.

In considering errors within the essays, another area to examine is word errors. The data are presented in Table 6. It is apparent that word-choice and capitalization errors were infrequent. Although only eight percent of the words in the average essay were misspelled, the males did make significantly more spelling errors.

Table 6. Average Essay Written by 9-Year-Olds, Word Errors

	Average Number of Words/Essay	Average Percent of Words/Essay
Spelling errors		
DoDDS students	5.1	8%
Males	5.7	9
Females	4.5	6
Word choice errors		
DoDDS students	.5	1
Males	.5	1
Females	.6	1
Capitalization errors		
DoDDS students	.7	1
Males	.7	1
Females	.7	1

Punctuation is an area that gives many writers problems. Because the rules vary widely as to when punctuation marks should or should not be used, the most informal rules were the guideline for scoring the DoDDS students' essays. It is apparent that the 9-year-olds simply did not use punctuation marks other than end marks. The average essay contained only .7 commas; 71% of the essays had no commas whatsoever. There were slightly more apostrophes, .9, in the average essay, but only .2 quotation marks and .1 dashes. The error count would indicate that although the 9-year-olds were not using many commas, perhaps they should have been. But still, the number of comma errors was so low that it could not really be considered a problem. There were 1.2 comma errors in the average essay, .5 apostrophe errors, .4 quotation errors and only .01 dash errors.

Range of the Essays by 9-Year-Olds

The "average" essay written by a DoDDS 9-year-old is a useful construct, but it is also important to examine the characteristics of the entire range of essays. In doing so, it is possible to discover a number of interesting things:

- While the average essay contained 76 words, 10% of the essays contained 33 words or fewer with the shortest containing only three words. At the other extreme, 10% of the essays contained 126 or more words, with the longest containing 234 words.
- Slightly more than a third (34%) of the essays contained four sentences or fewer; the upper third of the essays contained eight or more sentences, with the longest including 28 sentences.
- Eighty-six percent of the essays were written as a single paragraph.
- Although simple sentences (with and without phrases) accounted for 43% of the sentences included in the average essay, 18% of the essays did not have any simple sentences and 16% contained only one simple sentence.
- Forty percent of the essays did not have any awkward sentences, and 69% of the essays did not have any sentences with agreement errors.
- The average essay contained five spelling errors. However, 12% of the essays did not have any spelling errors, another 12% contained one spelling error and 11% had two spelling errors.

B. Comparison of Students in DoDDS and the Nation at Age 9

Having examined the average essay written by 9-year-olds enrolled in the Department of Defense Dependents Schools, it is now appropriate to compare that profile with the average essay written by 9-year-olds enrolled in schools throughout the United States. Do DoDDS 9-year-olds write as well as their national counterparts? Table 7 presents descriptive data about the average essay written by each group of 9-year-olds and about differences between the two groups.

Table 7. Comparison of Average Essays Written by 9-Year-Olds, Counts

	Nation	DoDDS	Difference
Average number of words/essay	55.5	76.1	20.7*
Average number of sentences/essay	4.8	6.45	1.64*
Average number of paragraphs/essay	1.35	1.34	- 0.01
Average number of punctuation marks	5.5	8.0	2.5*
Average number of letters/word	3.78	3.82	0.04*
Average number of words/sentence	14.6	15.9	1.3
Average number of words/paragraph	50.3	68.9	18.6*
Average number of sentences/paragraph	4.3	5.7	1.5*

*Differences that are statistically significant are indicated by asterisks.

As is evident at first glance, the DoDDS students wrote significantly longer essays than their national counterparts. The reason for this is not known. It is possible that DoDDS students were used to writing more often and/or writing longer pieces than their national counterparts. It is possible that DoDDS staff administering the assessment misunderstood the timing instructions and inadvertantly provided students with a greater length of time or encouraged them to write more. It is possible that the DoDDS students were encouraged to write more because of the "novelty" of the assessment situation. There are any number of possible explanations. However, the fact remains that the DoDDS 9-year-olds wrote significantly longer essays.

But, because of their additional length -- both in words and sentences -- the DoDDS essays tended to have higher "counts" in most areas. The totals could be construed as encouraging for the favorable categories, such as complex sentences, and discouraging for the unfavorable categories, such as spelling errors. Thus, to present an equitable comparison, the rest of this discussion will be based on percentages. Table 8 presents information about the percent of various sentence types included in the average essay.

Table 8. Comparison of Average Essays Written by 9-Year-Olds, Sentences

	National Average Percent of Sentences/ Essay	DoDDS Average Percent of Sentences/ Essay	Difference
Simple sentences	46%	43%	-3%
Compound sentences	5	5	#
Complex sentences	27	28	1
Run-ons	15	17	3+
Fragments (incorrect)	7	6	-1
Sentences with phrases	60	56	-3+
Simple sentences with phrases	33	30	-3
Compound sentences with phrases	4	4	#
Complex sentences with phrases	22	22	#

#Difference less than 1%.

+Difference may appear larger or smaller by a magnitude of 1 as percents were subtracted before rounding.

Although none of the differences between the two groups are statistically significant, it is interesting to note the similarities and differences between them. Of the three acceptable sentence structures, compound sentences with or without phrases appear to be the least widely used. Compound sentences with phrases accounted for 4% of the sentences written by both groups, while compound sentences without phrases accounted for another 1%. The most commonly written sentence type for both groups was the simple sentence. However, students nationally wrote 3% more sentences of this type than did the DoDDS students. On the other hand, the DoDDS students wrote 1% more complex sentences. For both groups, a vast majority of the sentences of each type contained at least one phrase.

The other noticeable difference between the two groups is found in the use of run-on sentences. Run-ons were scored in three separate categories -- fused: two or more independent clauses written without punctuation or coordinating conjunction; comma splice: two or more independent clauses separated by a comma; and on-and-ons: four or more independent clauses connected by conjunctions. The DoDDS students wrote 3% more run-ons than their national counterparts. This is largely accounted for by the fused-sentences category. Students nationally had 10% of their sentences in this category, while DoDDS students had 12%.

Slight differences also appear between the two groups in the categories dealing with faulty sentence constructions (Table 9). Three percent more of the sentences written by DoDDS students than those nationwide were rated as awkward, and 1% more of the DoDDS students' sentences contained agreement errors than those of 9-year-olds nationally. When considered with the increase in run-ons written by DoDDS students, this could be an indication of less control of sentences on the part of the DoDDS students. However, it could also be an effect of the DoDDS students having written longer essays in the first place. As most writers and teachers recognize, the more a person writes, the more likely that there will be syntactic difficulties.

Table 9. Comparison of Faulty Sentence Constructions Written by 9-Year-Olds

	National Average Percent of Sentences/ Essay	DoDDS Average Percent of Sentences/ Essay	Difference
Awkward sentences	18%	21%	3%
Sentences with agreement errors	9	10	1

Word errors, which include spelling, word choice and capitalization, are another area of categories that deserves some attention. As has already been suggested, the more a writer writes, the more likely he or she is to make mistakes. Spelling errors do not appear to bear this out. An average of 8% of the DoDDS students' words were misspelled. This is significantly lower than the national average of 9%. Although low for both groups, the DoDDS students also had a significantly lower average percent of capitalization errors: 1% as compared with 2% for the nation. On the other hand, the average percent of word-choice errors was the same for both groups of students -- a very low .8%.

As far as general quality is concerned, paragraphs were scored on the basis of their coherence. Single-sentence paragraphs and paragraphs that had abrupt changes in topic every sentence or two were scored "Paragraph Used" (PU); paragraphs that had minor thematic shifts or that were underdeveloped were scored "Paragraph Coherent" (PC); and paragraphs that established a main idea and consistently developed that idea were scored "Paragraph Developed" (PD). Table 10 shows the comparison between students in the United States and students in the DoDDS system.

Table 10. Comparison of Paragraphs Written by 9-Year-Olds

	National Average Percent	DoDDS Average Percent	Difference
Incoherent paragraphs (PU)	28%	19%	-9%*
Coherent paragraphs (PC)	70	73	3*
Coherent and developed paragraphs (PD)	2	8	6*

*Differences that are statistically significant are indicated by asterisks.

The DoDDS students' percents at all three levels were significantly different from the national performance. Only 19% of the DoDDS students' paragraphs were rated as incoherent (PU) as compared with 28% for the nation. DoDDS students' percent of coherent paragraphs (PC) was higher than the national average -- 73% as compared with 70% -- but the really intriguing result was the average percent of developed paragraphs. Eight percent of the DoDDS students' paragraphs were scored as being developed (PD), compared with an average of only 2% for the nation.

Another way of looking at these percentages is to combine the "PC" and the "PD" categories. Only 72% of the paragraphs in the national sample were at least coherent; of the DoDDS paragraphs, 81% were at least coherent, which seems to suggest that the DoDDS 9-year-olds had an understanding of what a paragraph is and how it should be structured.

CHAPTER 3:

The Performance of 13-Year-Olds

A. A Profile of the Average Essay Written by a DoDDS 13-Year-Old Student in 1979.

The average paper written by 13-Year-olds enrolled in the Department of Defense Dependents Schools (DoDDS) had a profile distinctly different from the profile described earlier of the average essay written by 9-year-olds in the DoDDS system. Table 11 provides a descriptive picture of the average essay of 13-year-old DoDDS students and a profile of the essays written by males and females. The average essay consisted of 174 words; males wrote significantly shorter essays (165 words), while females wrote significantly longer essays (approximately 182 words). The average essay contained from 12 to 13 sentences, with the average essay written by males having slightly fewer than 12 sentences and the average essay written by females containing slightly more than 13 sentences. The sentences were approximately 16 words in length, and the average word contained approximately four letters. For the average essay, the sentences tended to be organized into nearly three paragraphs.

Table 11. Average Essay Written by DoDDS 13-Year-Olds, Counts

	All DoDDS Students	Males	Females
Average number of words/essay	174.0	165.1* (-8.9*)	182.4* (8.5*)
Average number of sentences/essay	12.5	11.4* (-1.0*)	13.4* (0.9*)
Average number of paragraphs/essay	2.5	2.3* (-0.2*)	2.8* (0.2*)
Average number of punctuation marks	20.8	18.6* (-2.2*)	22.9* (2.1*)
Average number of letters/word	4.0	4.0	4.0
Average number of words/sentence	15.9	17.0* (1.1*)	14.8 (-1.1*)
Average number of words/paragraph	107.0	104.7 (-2.2)	109.1 (2.1)
Average number of sentences/paragraph	7.5	7.1 (-0.4)	7.8 (0.3)

*Differences (in parentheses) that are statistically significant are indicated by asterisks.

Table 12. Average Essay Written by DoDDS 13-Year-Olds, Sentences

	Average Number of Sentences/Essay	Average Percent of Sentences/Essay
Simple sentences		
All DoDDS students	6.1	45%
Males	5.6	45
Females	6.5	45
Compound sentences		
All DoDDS students	.8	6
Males	.8	7
Females	.8	6
Complex sentences		
All DoDDS students	4.0	32
Males	3.6	31
Females	4.4	34
Run-ons		
All DoDDS students	1.2	13
Males	1.2	15
Females	1.2	11
Fragments (incorrect)		
All DoDDS students	.4	3
Males	.3	3
Females	.5	3
Sentences with phrases		
All DoDDS students	8.5	67
Males	7.9	67
Females	9.0	67
Simple sentences with phrases		
All DoDDS students	4.5	34
Males	4.3	35
Females	4.7	33
Compound sentences with phrases		
All DoDDS students	0.6	5
Males	0.6	6
Females	0.7	5
Complex sentences with phrases		
All DoDDS students	3.3	27
Males	3.0	26
Females	3.6	28

Table 12 provides more detailed information about the types of sentences used in the average essay. The first five categories in the table add up to the total number of sentences in the essay. The remaining four categories are not additive. Thus, of the 12 to 13 sentences in the average paper, six are simple sentences, four are complex sentences and the remainder are either compound sentences, run-ons or incorrect fragments. It should be noted that these last two are not considered acceptable sentence forms. If these figures are translated into percents, then it is likely that 45% of the sentences in the average essay will be simple sentences, 32% will be complex sentences, 13% will be run-ons, 6% will be compound sentences and 3% will be incorrectly used sentence fragments.

The DoDDS 13-year-olds wrote considerably longer essays than the 9-year-olds, using many more sentences. The types of sentences they wrote show progress toward more mature writing. Although 45% of the sentences were simple sentences, 34% of those contained at least one phrase. The truly encouraging figure is that 32% of the sentences were complex. Of those, 27% contained phrases, which means that the 13-year-olds are not only imbedding information using clauses, but are also incorporating into those sentences further information using phrases. Only 6% of the sentences in the average essay were compound sentences.

One key to the ability of writers to write sentences is in the percentage of incorrect sentence types. Here again, the 13-year-olds demonstrated improvement. Only 13% of the sentences in the average essay were run-ons. However, the males did seem to have a slightly greater tendency to run sentences on than the females (15% for males as compared with 11% for females). Incorrect fragments seemed to be a minor problem for 13-year-olds of either sex, with only 3% of the sentences in the average paper being rated as an incorrect fragment.

Four out of every five paragraphs were coherent (i.e., consistent in their use of topic and time). One paragraph out of every 16 was fully developed (i.e., had one central area of concern and each sentence representing an orderly addition or explanation of that concern). The data concerning paragraphs are presented in Table 13. An interesting difference occurred between males and females in the coherent paragraph category. In the average essay written by males, 81% of the paragraphs were coherent, while in the average essay written by females, 76% were coherent. Although the females wrote slightly more developed paragraphs -- 6% as compared with 5.6% for the males -- combining the two categories shows that 86% of the paragraphs written by males were at least coherent, whereas 82% of the paragraphs written by females were at least coherent.

Table 13. Paragraphs, Age 13

	Average Number	Average Percent
Incoherent paragraphs		
All DoDDS students	0.72	16%
Males	0.63	14
Females	0.81	17
Coherent paragraphs		
All DoDDS students	1.70	78
Males	1.59	81
Females	1.82	76
Coherent and developed paragraphs		
All DoDDS students	0.11	6
Males	0.09	6
Females	0.13	6

What types of errors were present in the essays written by DoDDS 13-year-olds? Table 12 indicated that 3% of the sentences found in the average essay were actually incorrect sentence fragments. This included any word group, other than an independent clause, written and punctuated like a sentence. Table 12 also indicated that 13% of the sentences were run-ons. Run-ons included three types of errors: fused sentences, where there are two or more independent clauses with no punctuation or conjunction separating them; on-and-on sentences, where there are four or more independent clauses strung together with conjunctions; and comma splices, where two or more independent clauses are joined by a comma instead of a semicolon or a coordinating conjunction. Table 14 presents data for the three types of errors included in the run-on category. By age 13, DoDDS students seem to splice a sentence as often as they fuse one. This could be an indication that use of punctuation is becoming more familiar to them.

Table 14. Types of Run-ons, Age 13

	Average Number of Sentences/Essay	Average Percent of Sentences/Essay
Fused sentences		
All DoDDS students	0.6	7%
Males	0.6	8
Females	0.7	6
Comma splices		
All DoDDS students	0.5	5
Males	0.5	5
Females	0.5	4
On-and-on sentences		
All DoDDS students	0.05	9
Males	0.04	1
Females	0.05	7

Faulty sentence constructions is another area to examine when considering errors in the essays. Awkward sentences and sentences with agreement errors were the two types of errors rated. A sentence was considered to be awkward if it contained at least one of the following: faulty subordination (putting the main idea into a dependent clause and a secondary idea into a main clause); unclear pronoun antecedent; dangling or misplaced modifier; omitted or extra words; faulty coordination (two or more independent clauses written as one sentence but not logically related); mixed or illogical construction, such as faulty parallelism; and split construction. If a sentence contained more than one of these problems, the sentence was rated as awkward only once. A sentence was rated as having an agreement error if there was a problem with subject/verb, pronoun/antecedent or noun/modifier agreement, subject/object pronoun usage, or a shift in verb tense. Again, a sentence was scored as having an agreement error if at least one of these errors was found in a sentence; multiple errors within a sentence were not scored. The data for faulty sentence constructions in the DoDDS study are presented in Table 15.

Table 15. Faulty Sentence Constructions, Age 13

	Average Number of Sentences/Essay	Average Percent of Sentences/Essay
Awkward sentences		
All DoDDS students	2.3	22%
Males	2.3	24
Females	2.3	19
Sentences with agreement errors		
All DoDDS students	1.1	11
Males	1.2	13
Females	1.0	9

Twenty-two percent of the sentences in the average essay were awkward. This is a fairly high percentage. As has been mentioned, the 13-year-olds were writing very few incorrect sentence types, but it now appears that — within their correct sentences — they were making a fair number of syntactic errors. This is not necessarily a sign that there is a problem. Considering that these students are experimenting with sophisticated structures and have reached the point where they are able to organize them into correct sentences, it should not be particularly alarming that they are running into some content difficulties. Perhaps some of the problems are simply cases of poor judgment of what and how much to incorporate in one sentence and indicates no more than that the students need more practice writing.

This may also hold true for the agreement errors. Although 11% for the average DoDDS paper is not a particularly large amount, the difference between the males, 13%, and the females, 9%, is considerable and may be worth looking into more closely.

Another area of interest is word errors. The data are presented in Table 16. Word choice errors and capitalization errors were infrequent — only 1% in the average essay for each type of error. There were slightly more spelling errors (5% in the average essay), with the males misspelling 2% more words than the females.

Table 16. Average Essay Written by 13-Year-Olds, Word Errors

	Average Number of Words/Essay	Average Percent of Words/Essay
Spelling errors		
All DoDDS students	7.5	5%
Males	8.5	6
Females	6.5	4
Word choice errors		
All DoDDS students	1.0	1
Males	1.0	1
Females	1.0	1
Capitalization errors		
All DoDDS students	1.3	1
Males	1.6	1
Females	1.1	1

Punctuation is a more difficult area to discuss. Because the rules vary widely as to when punctuation marks should or should not be used, for scoring the DoDDS students' essays, the most informal rules were the guideline.

The DoDDS 13-year-olds did not use a great many punctuation marks. The average essay contained only 5 commas, 2 apostrophes, .5 dashes and .3 quotation marks. One reason for the lack of punctuation might be the explanatory nature of the task.

Because there was no differentiation made between errors of commission and errors of omission, it is impossible to say whether the number of punctuation errors is a reflection of students using punctuation erroneously or not using punctuation where they should. But still, the counts were not so high as to be distressing. There were only four comma errors in the average paper, one apostrophe error, .04 dash errors and .05 quotation mark errors.

Range of the Essays by 13-Year-Olds

The "average" essay written by a DoDDS 13-year-old is a useful construct, but it is also important to examine the characteristics of the entire range of essays. In doing so, it is possible to discover a number of interesting things:

- While the average essay contained 174 words, 10% of the essays contained 94 words or fewer, with the shortest containing 21 words. At the other extreme, 10% of the essays contained 260 or more words, with the longest containing 393 words.
- Slightly more than a third (34%) of the essays contained nine sentences or fewer; the upper third of the essays contained 14 or more sentences, with the longest including 37 sentences.
- Forty-nine percent of the essays were written as a single paragraph. Twenty percent contained four or more paragraphs.
- Although simple sentences (with and without phrases) accounted for 45% of the sentences included in the average essay, 5% of the essays did not have any simple sentences and 8% contained only one simple sentence.
- Sixteen percent of the essays did not have any awkward sentences, and 43% of the essays did not have any sentences with agreement errors.
- The average essay contained seven spelling errors. However, only 5% of the essays did not have any spelling errors, another 8% contained one spelling error and 9% had two spelling errors.

B. Comparison of Students in DoDDS and the Nation at Age 13

The profile of the average essay written by 13-year-olds enrolled in the Department of Defense Dependents Schools was discussed in the previous section. It would now seem appropriate to compare that profile with the profile of the average essay written by 13-year-olds enrolled in schools throughout the United States. Table 17 presents descriptive data about the average essay written by each group of 13-year-olds as well as data about the differences between the two.

Table 17. Comparison of Average Essays Written by 13-Year-Olds, Counts

	Nation	DoDDS	Difference
Average number of words/essay	121.6	174.0	52.4*
Average number of sentences/essay	9.3	12.5	3.2*
Average number of paragraphs/essay	1.7	2.5	0.8*
Average number of punctuation marks	14.5	20.8	6.3*
Average number of letters/word	3.98	4.02	0.04
Average number of words/sentence	15.6	15.9	0.3
Average number of words/paragraph	93.9	107.0	13.1*
Average number of sentences/paragraph	7.0	7.5	0.5

*Differences that are statistically significant are indicated by asterisks.

The fact that the DoDDS 13-year-olds wrote significantly more than their national counterparts is readily apparent. Why this was so is impossible to determine. It may be that the DoDDS students are accustomed to writing more. Or, perhaps the staff member administering the assessment inadvertently allowed the students more time to complete their essays than was given to the national sample. Whatever the explanation, the DoDDS essays were significantly longer.

However, the one category where essays by DoDDS 13-year-olds and by 13-year-olds nationwide were virtually the same was in the number of words per sentence. Interestingly, 15.6 words per sentence -- the average for 13-year-olds nationwide -- is an average of one word more than for the nation's 9-year-olds. But the DoDDS average for 13-year-olds of 15.9 words per sentence is exactly the same as the DoDDS 9-year-olds. Thus, although the nation's 13-year-olds appear to be increasing the length of their sentences, the DoDDS 13-year-olds seem to have reached a plateau.

Because of the additional length, both in words and sentences, the DoDDS essays tended to have higher counts in most areas than the essays had nationally. This could mislead people in that the counts could be interpreted as encouraging for the favorable categories, like complex sentences, and be discouraging for the unfavorable categories, like spelling errors. Therefore, in order to present a more realistic comparison, the rest of this section will be based on percentages. Table 18 presents information about the percent of the different sentence types included in the average essay.

Table 18. Comparison of Average Essays Written by 13-Year-Olds, Sentences

	National Average Percent of Sentences/ Essay	DoDDS Average Percent of Sentences/ Essay	Difference
Simple sentences	46%	45%	-1%
Compound sentences	6	6	#
Complex sentences	26	32	6%*
Run-ons	16	13	-3%
Fragments (incorrect)	6	3	-3%*
Sentences with phrases	58	67	8%*†
Simple sentences with phrases	32	34	2%
Compound sentences with phrases	5	5	#
Complex sentences with phrases	21	27	6%*

Difference less than 1%.
† Difference may appear larger or smaller by a magnitude of 1 as percents were subtracted before rounding.
* Differences that are significant are indicated by asterisks.

At age nine there were no significant differences between the two groups in so far as sentence types are concerned. However, by age 13, it is clear that some changes are taking place. Once again, compound sentences were not widely used by either group, and simple sentences were still the most popular construction. Although nationally the students wrote one percent more simple sentences, the difference is insignificant.-- 46% nationally contrasted with 45% for DoDDS.

An important development is with the complex sentences. In the average DoDDS essay, 32% of the sentences were complex compared with 26% of the sentences in the average essay nationwide.

Another significant difference occurred in the percentage of sentences containing phrases: 67% for DoDDS as opposed to 58% for the nation. These figures imply that the DoDDS students are attempting to imbed more information into their sentences, which is an indicator of progress toward more mature writing.

Another noticeable difference between the two groups is found in the percentages relating to incorrect sentence types. Run-ons were scored in three separate categories -- fused: two or more independent clauses written without punctuation or coordinating conjunction; comma splice: two or more independent clauses separated by a comma; and on-and-on: four or more independent clauses connected by conjunctions. The 13% run-ons in the DoDDS 13-year-olds' average essay was 3% fewer than their national counterparts', 16%. This is largely accounted for in the fused-sentence category. Nationally, 10% of the sentences were categorized as being fused, while only 7% of the DoDDS students sentences were fused.

The DoDDS students also wrote significantly fewer incorrect fragments. Only 3% of their sentences were incorrect fragments as opposed to 6% for the nation. The fact that the DoDDS students wrote more complex sentences and sentences with phrases, coupled with their lower percentages of incorrect sentence types, gives further credence to the conjecture that their writing is more mature.

Slight differences appear between the two groups in the categories dealing with faulty sentence constructions (Table 19). One percent fewer of the sentences written by DoDDS students were awkward and one percent fewer contained agreement errors. When taking into consideration the lower percentage of run-ons and incorrect fragments, it appears that the DoDDS students had better control of their sentences while attempting more complicated structures.

Table 19. Comparison of Faulty Sentence Constructions Written by 13-Year-Olds

	National Average Percent of Sentences/ Essay	DoDDS Average Percent of Sentences/ Essay	Difference
Awkward sentences	23%	22%	-1.7%
Sentences with agreement errors	12	11	-1

Word errors, which include spelling, word choice and capitalization, are a concern to many people. If a writer has difficulty, especially with spelling and word choice, the readability of a piece of writing can be seriously impaired. Neither the DoDDS students nor the students nationally seem to have problems with spelling. For both groups, only 5% of the words in the average essay were misspelled.

Although low for both groups, the DoDDS students had a significantly lower average percent of capitalization errors, .8% compared with 1.4% for the nation. The average percent of word-choice errors was the same for both groups of students, a very low .6%.

As far as general quality is concerned, paragraphs were scored on the basis of their coherence. Single-sentence paragraphs and paragraphs that had abrupt changes in topic every sentence or two were scored "Paragraph Used" (PU); paragraphs that had minor thematic shifts or that were underdeveloped were scored "Paragraph Coherent" (PC); and paragraphs that established a main idea and consistently developed that idea were scored "Paragraph Developed"(PD). Table 20 shows the comparison between students in the United States and students in the DoDDS system.

Table 20. Comparison of Paragraphs Written by 13-Year-Olds

	National Average Percent	DoDDS Average Percent	Difference
Incoherent paragraphs (PU)	17%	16%	-1.5%
Coherent paragraphs (PC)	73	78	5.5*
Coherent and developed paragraphs (PD)	10	6	4

*Differences that are significant are indicated by asterisks.

The DoDDS percents were significantly different only at the coherent paragraph level. A low 16% of the DoDDS students' paragraphs were rated as incoherent, or PU, as compared with only 17% for the nation. The percent of DoDDS coherent paragraphs (78%) was considerably higher than that of the nation (73%). However, the DoDDS 13-year-olds had a lower percent of developed paragraphs. Six percent of the DoDDS paragraphs were scored as being PD, compared with 10% for the nation.

Another way of looking at these percentages is to combine the PC and the PD categories. When considering the percentage of paragraphs that were at least coherent for both groups, very little difference is apparent. In the average essay, 84% of the DoDDS paragraphs were at least coherent; 83% of the paragraphs nationally were at least coherent.

CHAPTER 4:

The Performance of 17-Year-Olds

A. A Profile of the Average Essay Written by a DoDDS 17-Year-Old Student in 1979.

The average paper written by 17-year-olds enrolled in the Department of Defense Dependents Schools (DoDDS) followed the trend established by the 13-year-olds' profile in that the essays continued to get longer as the students got older. Table 21 provides a descriptive picture of the average essay for DoDDS students and a profile of the essays written by males and females. The average essay consisted of 221 words; males wrote somewhat shorter essays (approximately 217 words) while females wrote somewhat longer essays (226 words). The average essay contained from 14 to 15 sentences, with the average essay written by males containing slightly fewer than 14 sentences and the average essay written by females containing slightly more than 15 sentences. The sentences were approximately 16 words in length; the average word contained approximately four letters. For the average essay, the sentences tended to be organized into three paragraphs.

Table 21. Average Essay Written by DoDDS 17-Year-Olds, Counts

	All DoDDS Students	Males	Females
Average number of words/essay	221.4	216.6 (-4.8)	225.9 (4.5)
Average number of sentences/essay	14.4	13.5 (-0.9*)	15.3 (0.8*)
Average number of paragraphs/essay	3.0	2.8 (-0.2*)	3.2 (0.2*)
Average number of punctuation marks	27.2	26.1 (-1.1*)	28.2 (1.0*)
Average number of letters/word	4.2	4.2	4.2
Average number of words/sentence	16.4	17.1 (0.7*)	15.8 (-0.6*)
Average number of words/paragraph	113.0	115.3 (2.3)	110.8 (-2.2)
Average number of sentences/paragraph	7.3	7.0 (-0.2)	7.5 (0.2)

*Differences (in parentheses) that are statistically significant are indicated by asterisks.

Table 22. Average Essay Written by DoDDS 17-Year-Olds, Sentences

	Average Number of Sentences/Essay	Average Percent of Sentences/Essay
Simple sentences		
All DoDDS students	6.9	45%
Males	6.3	43
Females	7.5	47
Compound sentences		
All DoDDS students	0.9	6
Males	0.8	6
Females	0.9	6
Complex sentences		
All DoDDS students	5.3	38
Males	5.0	38
Females	5.6	38
Run-ons		
All DoDDS students	0.8	8
Males	1.0	9
Females	0.7	6
Fragments (incorrect)		
All DoDDS students	0.5	3
Males	0.4	3
Females	0.5	3
Sentences with phrases		
All DoDDS students	11.0	77
Males	10.3	76
Females	11.7	77
Simple sentences with phrases		
All DoDDS students	5.7	38
Males	5.2	37
Females	6.1	39
Compound sentences with phrases		
All DoDDS students	0.8	5
Males	0.7	5
Females	0.8	5
Complex sentences with phrases		
All DoDDS students	4.6	33
Males	4.4	34
Females	4.8	33

Table 22 provides more detailed information about the types of sentences used in the average essay. The first five categories in the table add up to the total number of sentences in the essay. The remaining four categories are not additive.

Thus, of the 14 to 15 sentences in the average paper, seven are simple sentences, five are complex sentences, one is a compound sentence and the remainder are either run-ons or incorrect fragments. These last two sentences types are not considered acceptable sentence forms.

If these figures are translated into percents, then it is likely that 45% of the sentences in the average essay will be simple sentences, 38% will be complex sentences, 8% will be run-ons, 6% will be compound sentences and 3% will be incorrectly used sentence fragments.

In comparison to the 13-year-olds, the 17-year-olds wrote longer essays, using more sentences and wrote more paragraphs. They also showed progress toward more mature writing. The percentage of compound sentences did not change from age 13 to age 17, nor did the percentage of simple sentences. However, of the 45% simple sentences in the average DoDDS 17-year-olds' essay, 38% of them contained phrases. In other words, very few of the simple sentences were basic subject/verb/object structures.

Another indication of greater sophistication is the complex sentence percentage. Thirty-eight percent of the sentences in the average essay of the 17-year-olds were complex sentences; thirty-three percent of those contained phrases. Both of these percentages are an increase over the 13-year-olds' average essay. Overall the sentence type categories, the 17-year-olds wrote more sentences with phrases; 77% of the sentences in the average essay of DoDDS 17-year-olds contained at least one phrase. This might indicate that along with imbedding information using clauses, the 17-year-olds are perhaps reducing some potential clauses to phrases, thereby increasing the amount of information incorporated in a single sentence.

An interesting fact that should be mentioned here is that across all three ages, the number of words in the average sentence was approximately the same, 16. This lends additional support to the conjecture that the 17-year-olds are writing more sophisticated sentences.

The percentage of incorrect sentence types is another clue to the 17-year-olds' writing ability. Although their percent of incorrect fragments, 3%, was the same as at age 13, the 17-year-olds wrote fewer run-ons. In the average 17-year-old paper, only 8% of the sentences were run-ons. However, even at age 17 the males wrote slightly more run-ons than the females, 9% as compared with 6%.

Four out of every five paragraphs were coherent (i.e., consistent in their use of topic and time). One paragraph out of every 14 also was fully developed (i.e., had one central area of concern and each sentence representing an orderly addition or explanation of that concern). The data concerning paragraphs are presented in Table 23.

At age 17 there appears to be no difference between males and females in their ability to write coherently. However, the males did have a slightly higher percentage of developed paragraphs, 7.7% as compared with 7.1% for the females.

Table 23. Paragraphs, Age 17

	Average Number	Average Percent
Incoherent paragraphs		
All DoDDS students	0.63	13%
Males	0.56	13
Females	0.69	13
Coherent paragraphs		
All DoDDS students	2.27	80
Males	2.12	80
Females	2.41	79
Coherent and developed paragraphs		
All DoDDS students	0.15	7
Males	0.15	8
Females	0.15	7

What types of errors were present in the essays written by DoDDS 17-year-olds? Table 22 indicated that 3% of the sentences found in the average essay were actually incorrect sentence fragments. This included any word group, other than an independent clause, written and punctuated like a sentence. Table 22 also indicated that 8% of the sentences were run-ons. Run-ons include three types of errors: fused sentences, where there are two or more independent clauses with no punctuation or conjunction separating them; on-and-on sentences, where there are four or more independent clauses strung together with conjunctions; and comma splices, where two or more independent clauses are joined by a comma instead of a semicolon or a coordinating conjunction. Table 24 presents data for the three types of errors included in the run-ons category.

A major shift seems to have taken place away from fused sentences (only 2% in the average essay by 17-year-olds) to comma splices (5% in the average essay by 17-year-olds). This trend started at age 9, when most of the run-ons were fused sentences. At age 13, the percent of run-ons declined, and they were divided fairly evenly between fused sentences and comma splices. At age 17, the total percent of run-ons was even smaller, with most of them being comma splices.

Table 24. Types of Run-ons, Age 17

	Average Number of Sentences/Essay	Average Percent of Sentences/Essay
Fused sentences		
All Dodds students	0.2	2%
Males	0.2	3
Females	0.2	1
Comma splices		
All DoDDS students	0.6	5
Males	0.6	6
Females	0.5	4
On-and-on sentences		
All DoDDS students	0.01	.3
Males	0.01	.2
Females	0.02	.4

Faulty sentence constructions is another area to examine when considering errors in the essays. This error includes awkward sentences and sentences with agreement errors. A sentence was considered to be awkward if it contained at least one of the following: faulty subordination (putting the main idea into a dependent clause and a secondary idea into a main clause); unclear pronoun antecedent; dangling or misplaced modifier; omitted or extra words; faulty coordination (two or more independent clauses written as one sentence but not logically related); mixed or illogical construction such as faulty parallelism; and split construction. If a sentence contained more than one of these problems, the sentence was rated as awkward only once. A sentence was rated as having an agreement error if there was a problem with subject/verb, pronoun/antecedent or noun/modifier agreement, subject/object pronoun usage, or a shift in verb tense. Again, a sentence was scored as having an agreement error if at least one of these errors was found in a sentence; multiple errors within a sentence were not scored. The data for faulty sentence construction in the DoDDS study are presented in Table 25.

Table 25. Faulty Sentence Constructions, Age 17

	Average Number of Sentences/Essay	Average Percent of Sentences/Essay
Awkward sentences		
All DoDDS students	2.5	19%
Males	2.5	21
Females	2.5	17
Sentences with agreement errors		
All DoDDS students	1.0	8
Males	1.0	8
Females	1.0	7

Nineteen percent of the sentences in the average essay were awkward. Considering the difficult sentence types the 17-year-olds were writing, this does not seem to be particularly high. In fact, the females, with only 17% awkward sentences, demonstrated good control of their sentences. The males, on the other hand, appear to have had more difficulty, with 21% of their sentences being awkward. Agreement did not seem to be a problem for either sex. Only 8% of the sentences in the average paper contained at least one agreement error.

Another potential problem area is word errors. The data are presented in Table 26. As in the 13-year-olds' average paper, word-choice errors and capitalization errors were infrequent: only .5% of the words were rated as word-choice errors and .4% were rated as capitalization errors. There were slightly more spelling errors -- 3% of the words were misspelled in the 17-year-olds' average essay.

Table 26. Average Essay Written by 17-Year-Olds, Word Errors

	Average Number of Words/Essay	Average Percent of Words/Essay
Spelling errors		
DoDDS students	6.0	3%
Males	7.0	3
Females	5.1	2
Word choice errors		
DoDDS students	1.0	.5
Males	1.0	.5
Females	1.1	.5
Capitalization errors		
DoDDS students	.9	.4
Males	1.0	.5
Females	.7	.3

Punctuation is an area that gives many writers problems. Because the rules vary widely as to when punctuation marks should or should not be used, the most informal rules were the guideline for scoring the DoDDS students' essays.

The 17-year-olds did not use many punctuation marks. The average essay contained 9 commas, 2 apostrophes, 1 dash and .7 quotation marks. One reason for this lack of punctuation might be the explanatory nature of the task. It is impossible to say whether the number of punctuation errors is a reflection of students using punctuation erroneously or not using it where they should because there was no differentiation between errors of commission and errors of omission. But still, the counts were not so high as to be distressing. There were only four comma errors in the average paper, 1 apostrophe error, .04 dash errors and .05 quotation errors.

Range of the Essays by 17-Year-Olds

The "average" essay written by a DoDDS 17-year-old is a useful construct, but it is also important to examine the characteristics of the entire range of essays. In doing so, it is possible to discover a number of interesting things:

- While the average essay contained 221 words, 10% of the essays contained 136 words or fewer with the shortest containing 55 words. At the other extreme, 10% of the essays contained 310 or more words, with the longest containing 447 words.
- Slightly less than a third (32%) of the essays contained 11 sentences or fewer; the upper third of the essays contained 16 or more sentences, with the longest including 44 sentences.
- Thirty-four percent of the essays were written as a single paragraph, but 25% of the essays had four or more paragraphs.
- Although simple sentences (with and without phrases) accounted for 45% of the sentences included in the average essay, one-third of the essays had four or fewer simple sentences.
- Fourteen percent of the essays did not have any awkward sentences, and 47% of the essays did not have any sentences with agreement errors.

B. Comparison of Students in DoDDS and the Nation at Age 17

Having examined the average essay written by 17-year-olds enrolled in the Department of Defense Dependents Schools, it is now appropriate to compare that profile with the average essay written by 17-year-olds enrolled in schools throughout the United States. Do DoDDS 17-year-olds write as well as their national counterparts? Table 27 presents descriptive data about the average essay written by each group of 17-year-olds and about differences between the two groups.

Table 27. Comparison of Average Essays Written by 17-Year-Olds, Counts

	Nation	DoDDS	Difference
Average number of words/essay	140.4	221.4	81.0*
Average number of sentences/essay	9.6	14.4	4.8*
Average number of paragraphs/essay	2.0	3.0	1.0*
Average number of punctuation marks	16.8	27.2	10.4*
Average number of letters/word	4.1	4.2	.07*
Average number of words/sentence	15.6	16.4	0.8*
Average number of words/paragraph	96.5	113.0	16.5*
Average number of sentences/paragraph	6.6	7.3	0.7*

*Differences that are statistically significant are indicated by asterisks.

As is evident at first glance, the DoDDS students wrote significantly longer essays than their national counterparts. The reason for this is not known. It is possible that DoDDS students were used to writing more often and/or writing longer pieces than their national counterparts. It is possible that DoDDS staff administering the assessment misunderstood the timing instructions and inadvertantly provided students with a greater length of time. There are any number of possible explanations. However, the fact remains that the DoDDS 17-year-olds wrote significantly longer essays.

But, because of their additional length -- both in words and sentences -- the DoDDS essays tended to have higher "counts" in most areas. The totals could be construed as encouraging for the favorable categories, such as complex sentences, and discouraging for the unfavorable categories, such as spelling errors. Thus, to present an equitable comparison, the rest of this discussion will be based on percentages. Table 28 presents information about the percent of various sentence types included in the average essay.

Table 28. Comparison of Average Essays Written by 17-Year-Olds, Sentences

	National Average Percent of Sentences/ Essay	DoDDS Average Percent of Sentences/ Essay	Difference
Simple sentences	47%	45%	-1%†
Compound sentences	7	6	-1
Complex sentences	33	38	5*
Run-ons	9	8	-1
Fragments (incorrect)	4	3	-1
Sentences with phrases	72	77	4*†
Simple sentences with phrases	37	38	1
Compound sentences with phrases	6	5	-1
Complex sentences with phrases	29	33	4*

Difference less than 1%.
† Difference may appear larger or smaller by a magnitude of 1 as percents were subtracted before rounding.
* Differences that are statistically significant are indicated by asterisks.

Compound sentences were not widely used by either group and simple sentences, as was the case at the other two ages, were the most popular structure. Although nationally the students wrote slightly above 1% more simple sentences, the difference is insignificant -- 47% nationally contrasted with 43% for DoDDS. On the other hand, the difference between the two groups of students was significant in the complex sentence category. In the average DoDDS essay, 38% of the sentences were complex compared with 33% of the sentences in the average essay nationwide.

Another significant difference occurred in the percentage of sentences containing phrases: 77% for the DoDDS average essay as opposed to 72% for the nation. This implication of greater imbedding on the part of the DoDDS students is an indication of more mature writing.

Another noticeable difference between the two groups is found in the percentages relating to the incorrect sentence types. Run-ons were scored in three separate categories -- fused sentence: two or more independent clauses written without punctuation or coordinating conjunction; comma splice: two or more independent clauses separated by a comma; and on-and-on: four or more independent clauses connected by conjunctions. The DoDDS students wrote 1% fewer run-ons than their national counterparts. This is largely accounted for in the fused-sentence category. Nationally, 4% of the sentences were rated as being fused while only 2% of the DoDDS students sentences were fused.

The DoDDS students also wrote slightly fewer incorrect fragments. Only 3% of their sentences were incorrect fragments as opposed to 4% for the nation. The fact that the DoDDS students wrote more complex sentences and sentences with phrases and that they had a lower percentage of incorrect sentence structures lends strength to the conjecture that their writing is more mature.

Slight differences appear between the two groups in the categories dealing with faulty sentence constructions (Table 29). One percent fewer of the sentences written by DoDDS students were awkward and 1% fewer contained agreement errors.

When taking into consideration the lower percent of run-ons and incorrect fragments, it is apparent that the DoDDS students wrote more complicated correct sentences and also demonstrated an ability to control them better.

Table 29. Comparison of Faulty Sentence Constructions Written by 17-Year-Olds

	National Average Percent of Sentences/ Essay	DoDDS Average Percent of Sentences/ Essay	Difference
Awkward sentences	20%	19%	-1%
Sentences with agreement errors	9	8	-1

Word errors, which include spelling, word choice, and capitalization, are a concern to many people. If a writer has difficulty especially with spelling and word choice, the readability of a piece of writing can be seriously impaired. Neither the DoDDS students nor the students nationally seem to have problems with spelling. For both groups, only 3% of the words in the average essay were misspelled.

Although low for both groups, the DoDDS students had a significantly lower average percent of capitalization errors, .4%, compared with .7% for the nation. The average percent of word-choice errors was the same for both groups of students, a very low .5%

As far as general quality is concerned, paragraphs were scored on the basis of their coherence. Single-sentence paragraphs and paragraphs which had abrupt changes in topic every sentence or two were scored "Paragraph Used "(PU): paragraphs that had minor thematic shifts or that were underdeveloped were scored "Paragraph Coherent" (PC): and paragraphs that established a main idea and consistently developed that idea were scored "Paragraph Developed" (PD). Table 30 shows the comparison between students in the United States and students in the DoDDS system.

Table 30. Comparison of Paragraphs Written by 17-Year-Olds

	National Average Percent	DoDDS Average Percent	Difference
Incoherent paragraphs (PU)	14%	13%	1%
Coherent paragraphs (PC)	77	80	3
Coherent and developed paragraphs (PD)	9	7	-2

The DoDDS percents were noticeably different only at the coherent paragraph level. A low 13% of their paragraphs were rated as incoherent or PU as compared to only 14% for the nation. The DoDDS percent of coherent paragraphs was considerably higher (80%) than that of the nation (77%). However, the DoDDS 17-year-olds had a lower percent of developed paragraphs. Seven percent of the DoDDS paragraphs were scored as being PD, compared with 9% for the nation.

Another way of looking at these percentages is to combine the PC and the PD categories. When considering the percentage of paragraphs that were at least coherent for both groups, very little difference is apparent. In the average essay, 87% of the DoDDS paragraphs were at least coherent; 86% of the paragraphs nationally were at least coherent.

APPENDIX A

APPENDIX B

Appendix B

Syntactic Ability and Mechanics Type I

Paragraph: Scoring Outline

General--Place symbols at beginning of paper in left margin.

I. The entire paper is non-ratable.

NN = Paper not scorable for mechanics - Writer just copies stem, lists his spelling words, etc. Legible, but meaningless. No other scoring

LN = Whole paper basically illegible. Indecipherable, cannot be decoded, no intelligible interpretation. No other scoring

II. Occasionally a paper will not be ratable for a certain characteristic. In this case, give the paper the symbol of the characteristic followed by an "N" for non-ratable.

Ex. AN = Whole paper written in capitals.

Paragraphs--Place symbol before first word in paragraph. Do <u>not</u> score "titles."

Mark each paragraph with one of the following three symbols Every paper has at least one paragraph.

PU = <u>Paragraph Used</u>--Visually discernible but not coherent or developed. Writer indented, skipped a line, or stopped in the middle of the line and started back at the margin.

PC = <u>Paragraph Coherent</u>--Used and is coherent. The material is consistent, doesn't shift topic or tense. Include the overdeveloped (one paragraph that should have been two or more) as well as the underdeveloped paragraph.

PD = <u>Paragraph Developed</u>--Used, coherent, and properly developed. Paragraph has <u>one</u> central area of concern and each sentence is an orderly addition to or explanation of that concern.

Sentences: Scoring Outline

Sentences--Place symbols at the end of the sentence, except for punctuation. R (agreement) and W (awkward) follow the sentence descripter. Punctuation errors are marked wherever they occur.

I. Sentence type. Score each sentence according to sentence type. Each sentence must be scored as one of the following:

T = Fused--two or more independent clauses with no punctuation or conjunction separating them

O = On and On--four or more independent clauses strung together with conjunctions. The conjunctions joining the clauses need not all be the same.

M = Comma Splice--two or more independent clauses joined by a comma instead of a semicolon or conjunction.

NOTE: M takes precedence over T. O takes precedence over M and T.

F = Fragment Incorrect--any word group, other than an independent clause, written and punctuated like a sentence. If the subject or the entire verb is missing, the word group is a fragment. A fragment is automatically awkward; do not mark FW. Fragments containing agreement problems should be so marked.

NOTE: A word group with a portion of the verb missing should get the appropriate sentence descripter plus awkward for missing word.

G = Fragment Correct--above used in dialogue, for emphasis, or as an exclamation. Check context to determine correct from incorrect fragments.

SI = Simple--must have subject and verb; may have object or subject complement.

B = Simple with Phrase--subject and verb with prepositional, infinitive, gerund, participial, or other verbal phrases, appositive, or nominitive absolute. A sentence with a phrase used as subject, direct object, or subject complement should get B.

C = Compound--two or more independent clauses joined by something other than a comma.

D = Compound with Phrase

X = Complex (and Compound Complex)--at least one independent clause and one dependent clause

Z = Complex (and Compound Complex) with Phrase

Sentences: Scoring Outline

II. Punctuation. Score each sentence for other types of punctuation errors. Score every punctuation error in a sentence.

P = Punctuation Error--commission or omission involving commas, dashes, quotes, semicolons, apostrophes, and end marks. Mark the correct punctuation, if any, after the P; mark the incorrect punctuation, if any, before the P.

Thus: ,P = comma commission error
P, = comma omission error;
,P. = student put a comma which should have been a period.

NOTES: For T-O-M run-on sentences, mark internal commas, quotes, and apostrophes. Do not mark colons, semicolons, or end marks (unless the missing end mark is at the end of the essay), as this would be correcting the T-O-M fault.

Insert omitted periods if the preceding word group is a sentence and if the next word is capitalized.

Do not supply end punctuation for a fragment unless it occurs at the end of the essay.

Do not correct the writer's choice of end mark.

III. Agreement. Examine each sentence for errors in agreement. Score a sentence for agreement once, regardless of the number of agreement errors in that sentence. Agreement takes precedence over spelling or word choice errors.

R = Agreement Error--pronoun/antecedent, pronoun gender/number, subject/verb, noun/modifier, pronoun case, verb tense shift within a sentence.

IV. Awkward. Examine each sentence to see whether it is awkward. Score a sentence for awkwardness once, regardless of the number of faults in that sentence. If a sentence can be fixed several ways, the various changes involving different or more than one word, mark W.

W = Awkward Sentence--Faulty subordination, unclear pronoun antecedent, omitted or extra words, double negative, mixed, illogical or split construction.

NOTES: Check conjunctions (J) before giving W.

If a particular word could be changed several ways, any of which would correct the diction error, mark K.

Sentences: Scoring Outline

NOTE CONCERNING ALL SENTENCE MARKING:

Every sentence must have a descriptive mark from Group I. A sentence will get P marks if necesssary and at the place where the error occurs. A sentence will get R or W (or both) following the descripter <u>if and only if</u> at least one R or W fault occurs in that sentence.

Words: Scoring Outline

WORDS --Place symbols at the end of word (except LL, which goes above word). When marking the last word in a sentence, place word symbol(s) before sentence symbol(s). Circle word symbol(s) occurring at the end of a sentence.

I. Misspelled Words. Score each misspelled word (agreement takes precedence over spelling) into one of the following categories:

V = Reversal--left/right letter (b/d), left right word (was/saw), vertical letter (b/p,w/m, u/n).

S = Plural--plural formed incorrectly or not formed, when the latter is clearly not an agreement error.

H = Phonetic attempt--spelling which reflects correct pronunciation of the desired word; includes homonym confusion. (Homonym confusion takes precedence over word choice error.)

E = Other spelling error--includes wrong word division at the end of a line, beginning a sentence with a numeral, making two words into one (alot), making one word into two (room mate), superfluous plurals (Parkings lots), groups of distinguishable letters that do not make a legitimate word, groups of distinguishable letters that do not reflect the correct pronunciation of the desired word.

NOTE: A "misspelling" which results in another word must be scored within the context of its sentence. It is up to the scorer to determine whether this is a spelling error or a word choice error.

II. Word Choice errors. A word choice error results when one word is used instead of another which would clearly be better. If a particular word could be changed one or more ways, any of which would correct the diction error, mark a word choice error. Score each word considered to be an incorrect choice into one of the following categories:

J = Structure word--writer needs a preposition or conjunction but has used the wrong one.

K = Other word choice error--includes nouns, verbs, adjectives, or adverbs which are off by some shade of meaning; incorrect verb forms which are clearly not agreement; attempted verb, adjective, or adverb forms which may not be legitimate word (busted, beautifulest); confusion of sit/set, lie/lay, rise/raise, etc.

NOTE: K takes precedence over E when a wrong word is misspelled.
R (agreement) and W (awkward) take precedence over K or J. If the sentence could be fixed several ways, the various changes involving different or more than one word, mark the sentence W.

Words: Scoring Outline

III. Capitalization. Score words with capitalization errors as follows:

A = Capitalization error--includes first word in a sentence, proper nouns and proper adjectives within a sentence, the pronoun I wherever it occurs.

IV. Try to decipher handwriting as best you can. If you are able to decide what a questionable word is, trace the letters or rewrite above the word. If a word cannot be determined, score it:

LL = Illegible word

NOTE: If you can distinguish letters, score E.